



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,462	10/12/2001	Akira Matsumoto	939_030	9975

25191 7590 11/10/2003

BURR & BROWN
PO BOX 7068
SYRACUSE, NY 13261-7068

EXAMINER

LAVARIAS, ARNEL C

ART UNIT	PAPER NUMBER
----------	--------------

2872

DATE MAILED: 11/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/976,462

Applicant(s)

MATSUMOTO ET AL.

Examiner

Arnel C. Lavarias

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/12/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 1, 3 and 5-9 is/are rejected.
- 7) ☒ Claim(s) 2 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION***Response to Arguments***

1. The Applicants argue that, with respect to Claim 1, Seino et al. fails to teach or reasonably suggest a fiber array housing wherein an end face of the peripheral adhesive is recessed no more than 10 μm with respect to an end face of the fiber. After further consideration of the Seino et al. reference and further consultation with Primary Examiners of the art, the Examiner respectfully disagrees. Upon careful inspection of Figures 28(A)-(E), col. 3, line 40-col. 4, line 8, and col. 12, lines 17-55 of the Seino et al. reference, the Examiner notes that during the process of fabricating the fiber holder apparatus, shown in final form in Figure 28(E), parallel V-grooves are etched into a silicon substrate (See 14, 15 in Figure 28(A)). Optical fibers are placed into each of the parallel V-grooves, and an epoxy-type adhesive is coated to fill the gaps between the V-grooves and the fibers and also to cover the fibers on the substrate (See Figure 28(B)). A second substrate also having parallel V-grooves is then placed on top of the substrate with the optical fibers in the parallel V-grooves. In this process, because the epoxy-type adhesive is still in a fluid-like state, the act of placing the second substrate on top of the substrate with the optical fibers in the parallel V-grooves and applying pressure to bond the two substrates will force some of the epoxy-type adhesive out of the holes where the optical fibers protrude from the end faces of the two substrates. The epoxy-type adhesive is allowed to harden/cure. After curing, a lateral cut at a predetermined distance from the end face of the two substrates and perpendicular to the optical fibers in the parallel V-

Art Unit: 2872

grooves such that the newly exposed fiber end faces now all lie in the same plane as the newly exposed end faces of the two substrates (See Figures 28(C)-(D)). At this point, the Examiner notes that the end face of the epoxy-type adhesive flush with the end face of the optical fiber. The Examiner notes that the limitation "an end face of said peripheral adhesive is recessed no more than 10 μ m with respect to an end face of said fiber" includes the range from 0 to 10 μ m. Since the end face is, at the very least, flush with the end face of the optical fiber, the fiber holder apparatus of Seino et al. meets the recited limitations of Claim 1.

2. Claims 1, 3, 5-9 are rejected as follows.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 5-6, 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Seino et al. (U.S. Patent No. 4948219), of record.

Seino et al. discloses a fiber array embodiment (See for example the embodiment of Figure 28) housing a stripped fiber (See 1 in Figure 28) in a V-groove (See V-grooves in substrate 14 in Figure 28) of a V-groove substrate (See 14 Figure 28) comprising a fiber fixing substrate fixing the stripped fiber (See 17 in Figure 28); and a peripheral adhesive (See 16 in Figure 28) disposed around the stripped fiber, wherein an end face of the

Art Unit: 2872

peripheral adhesive is recessed with respect to an end face of the fiber (See Figure 28) such that the peripheral adhesive is recessed at least 0.1 microns and no more than 10 microns with respect to an end face of the fiber and the face of the fiber is flush or protrudes from the end face of the fiber array (See in particular Figure 28(E); col. 3, line 24-col. 4, line 8; col. 12, line 13-col. 13, line 7). Seino et al. also discloses an optical device being connected or fixed to the fiber array (See for example Figure 8).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seino et al. in view of Hirai et al. (EP0626600A1), of record.

Seino et al. discloses the invention as set forth above in Claim 1, except for the peripheral adhesive having a Young's modulus of at least 0.03 GPa. However, Hirai et al. teaches a fiber array (See Figures 8 or 9) housing a stripped fiber (See 10 in Figures 8 or 9) in a V-groove, wherein the fiber is attached to the various parts of the substrate with an adhesive having a Young's modulus of at least 0.03 GPa (or 3.059 kgf/mm²) (See Table 1 on Page 9). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the peripheral adhesive of Seino et al. have a Young's modulus of at least 0.03 GPa, as taught by Hirai et al., for the purpose

Art Unit: 2872

of reducing or eliminating component deformations due to variations in temperature, while maintaining adhesive bonding properties.

Allowable Subject Matter

7. Claims 2, 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. Claims 2, 4 are allowed. See Section 13 of Paper No. 8, dated 10/22/02.
9. Claims 10-11 are allowed. See Section 9 of Paper No. 15, dated 6/25/03.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2872

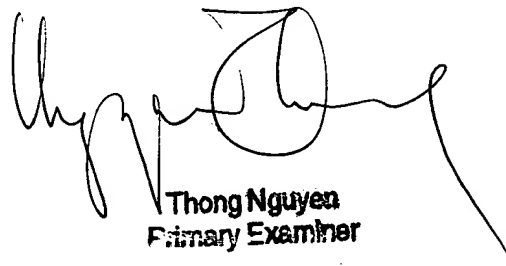
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 703-305-4007. The examiner can normally be reached on M-F 8:30 AM - 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 703-305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.



Arnel C. Lavarias
11/4/03



Thong Nguyen
Primary Examiner